

EXHIBIT 45





Today's Agenda

1. GDN-DBM Customer Segmentation Update
2. Q4 2015 Display Revenue Staples (brief)
3. AwBid Update
4. Mobile Apps Metrics Review
5. Thanksgiving update

*Note on scheduling: to accommodate the 2016 DVAA leads schedule,
we will be moving Display RevForce to Thursdays!
Starting 7-Jan, RevForce will take place on Thursdays from 12pm to 1pm.*



Intro to AwBid (AdWords Cross Exchange Bidder)

What: AwBid allows AdWords **remarketing** advertisers to buy ads on Non-Google inventory.

How: AwBid integrates with third party sell-side platforms and exchanges through real-time bidding interfaces.

Why: Close inventory gap and drive performance in competitive remarketing buyside space, and capture some of the 63% of budget unconstrained AdWords web spend.

When: AwBid has been operating since Q2 2013, but started accelerating rapidly in Q3 2015. Revenue set to increase with new exchanges and quality tunings.



Main Findings

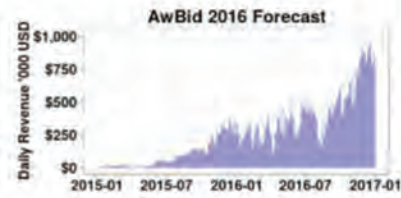
1. AwBid revenue is growing quickly, now driving **0.94ppt** of Q4 AdWords web growth:
 - a. **Rubicon, OpenX, Casale, and Adingo** fully ramped.
 - b. **Type-2 bidding** boosted revenue 50% Y/Y by reducing latency and view loss.
2. **AwBid CPD** is 40-70% of AdX and AFC CPDs, but increasing with CTRs as inventory ramps.
3. AdWords has 2-5X lower CPC/CPMs and higher CTRs on AwBid vs **DBM*** on Non-Google inv.
4. **Incrementality**: There is limited evidence to support **AwBid cannibalization** of Google inventory spend, but that could change if inventory growth out-paces budgets.
5. **Revenue Opportunities**:
 - a. Continue planned exchange expansion (~200-300%+)
 - b. Reduce time-out frequency for GPA from ~40% (17%+).
 - c. Add FBX (4%) and other 'Walled Garden' formats.
 - d. Expanding targeting beyond RMKT (200%+).
 - e. Dynamic Rev Share (+33% for 15-32% margin, +61% for 0-32% margin vs fixed 32%).

*Not controlling for brand/DR mix, which skews DBM CTR down and CPC up due to higher brand share³

2016 AwBid Forecast

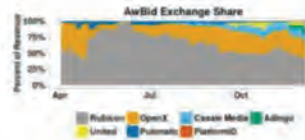
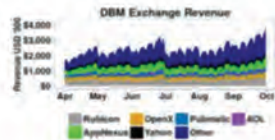
AwBid 2016 momentum forecast is \$149M, 496% Y/Y up from est. \$30M in 2015.

Forecast doesn't include impact of future inventory/targeting expansions.

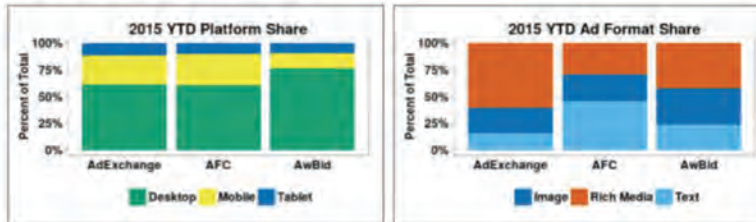


AwBid Exchanges

- Rubicon, OpenX, Adingo, and Casale make up 92% of December MTD AwBid revenue.
- These exchanges make up $\frac{1}{4}$ of DBM revenue. If AwBid exchange revenue ratios mirror DBM, we could see maximum ~3X more AwBid revenue solely from inventory expansion.
- Launch calendar does not include FBX (4.6% of DBM rev).



AwBid Revenue Mix

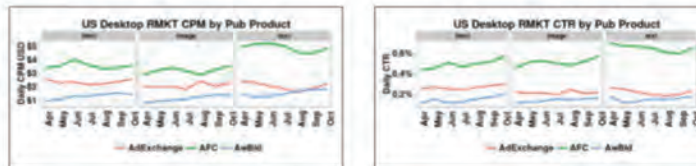


- AwBid is currently 100% remarketing
- AwBid revenue more weighted to Desktop (76% vs. 56%) than AdX and AFC, driven by relative strength of AdWords vs. DSPs on mobile
- AwBid ad format revenue share similar to AFC, with greater image ad and lower rich media revenue share than AdX.

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AwBid Pub Product Comparison

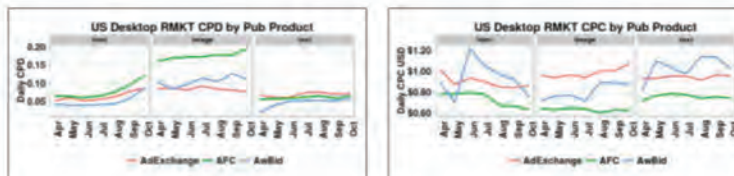
Methodology: Compare US AdWords Desktop RMKT auction metrics to control for mix effects.



Findings:

- Low CTRs + additional first-look opportunities suppressing AwBid CPMs below Adx & AFC levels.
- AwBid CTRs are increasing for all formats as new exchange inventory opens up.

AwBid Pub Product Comparison Continued



Findings:

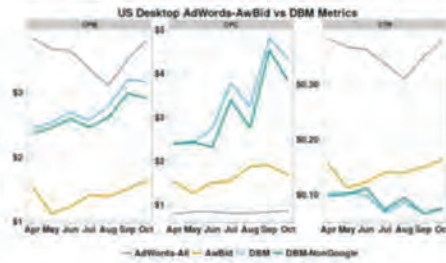
- AwBid CPDs approaching or above AdX CPDs, below AFC CPDs for all formats.
 - TextAd clicks/conversions remain more expensive, despite lack of auction pressure from DBM.
 - HTML CPDs rising quickly as CPCs decline.

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AwBid - DBM* Comparison

In US Desktop:

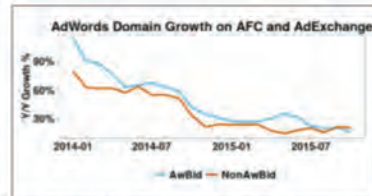
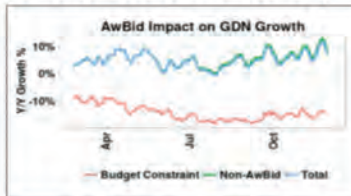
- AdWords on Google inventory has highest CTR and lowest CPC, reflecting differing bidding optimizations.
- AwBid CPMs lowest, reflecting low pCTR and additional first-look opportunities.
- AwBid CPMs below DBM, rising even as new exchanges ramp.
- AwBid can place text ads on Non-Google inventory, unlike DBM.



*Not controlling for brand/DR mix, which skews DBM CTR down and CPC up due to higher brand share

Id	Date	Text
1	12/09/2015 17:10:32	For this comparison to make sense, it needs to be apples to apples. We should compare AwBid to auto-optimized DBM remarketing spend only (not all of DBM).
1	12/09/2015 17:10:32	<p>I agree... we will add a clear note stating that we can't draw conclusions from an AwBid comparison to all of DBM.</p> <p>In the meantime, I am following up to see if we can track DBM RMKT only performance metrics for a more appropriate comparison.</p> <p>+ramisobti@google.com +mattguio@google.com</p>
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AwBid Incrementality



There is limited evidence to support that AwBid is cannibalizing AFC and AdExchange spend at current inventory levels.

- Non-AwBid GDN revenue growth has been [accelerating](#) during AwBid's ramp
- None of the top 10 AwBid pubs in 2015 or AFC/AdX pubs in 2014 show any AFC/AdX revenue cannibalization
- 20% of AwBid domains were unique to Google October 2015 ([link](#))

However, continued inventory expansion may have a negative impact on AFC and AdExchange spend:

- [Revenue growth](#) of non-AwBid domains has recently surpassed the growth of AwBid domains on AFC and AdExchange
- GDN [with budgets](#) have reversed their trajectory of becoming increasingly less budget constrained recently

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